

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed053 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	D. McGarry	Locality:	Edgar Gordon, Lyndon
Date Desc.:	07/07/86	Elevation:	396 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6671800 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	788600 Datum: AGD66	Drainage:	No Data

Geology

ExposureType:	Undisturbed soil core	Conf. Sub. is Parent. Mat.:	No Data
Geol. Ref.:	No Data	Substrate Material:	No Data

Land Form

Rel/Slope Class:	No Data	Pattern Type:	No Data
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	Pediment	Slope Category:	Moderately inclined
Slope:	4 %	Aspect:	320 degrees

Surface Soil Condition (dry): Firm, Trampled

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.15
		Great Soil Group:	Brown clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR2/2-Moist); ; Medium clay; Moderate grade of structure, 10-20 mm, Granular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 2-10%, coarse gravelly, 20-60mm, subangular, Basalt, coarse fragments; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish brown (5YR2/2-Moist); ; Heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 2-10%, coarse gravelly, 20-60mm, subangular, Basalt, coarse fragments; Field pH 7.7 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.4 m	Dark reddish brown (5YR2/2-Moist); , 10YR21, 2-10% , 5-15mm, Distinct; Heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B2	0.4 - 0.67 m	Dark brown (10YR3/3-Moist); , 10YR21, 2-10% , 5-15mm, Distinct; Light medium clay; Moderate grade of structure, 2-5 mm, Granular; Single grain grade of structure; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 8.7 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
2B21	0.67 - 1 m	Dark brown (7.5YR3/2-Moist); , 10YR21, 2-10% , 5-15mm, Distinct; , 7.5YR82, 2-10% , 15-30mm, Prominent; Light medium clay; Strong grade of structure, 5-10 mm, Prismatic; Moderate grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Basalt, coarse fragments; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Field pH 9 (pH meter); Few, very fine (0-1mm)
2B22	1 - 1.44 m	Dark brown (7.5YR3/2-Moist); , 7.5YR82, 2-10% , 15-30mm, Prominent; Medium clay; Strong grade of structure, 5-10 mm, Prismatic; Moderate grade of structure, 2-5 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 2-10%, medium gravelly, 6-20mm, rounded, Basalt, coarse fragments; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Field pH 9 (pH meter); Sharp, Smooth change to -

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3AC 1.44 - 2.38 m Dark reddish brown (5YR3/2-Moist); , N20, 0-2% , 0-5mm, Distinct; Medium clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 20-50%, coarse gravelly, 20-60mm, rounded, Basalt, coarse fragments; Field pH 9

Morphological Notes

A11 Layer 4 seems to be the B2 of the current topsoil, and is composed of powdered rock (light brown) and dark clay. There is then an abrupt break to an apparent buried B2, well structured clay, rich in carbonate. The break at 144cm is associated with a band of fine gravel, then there are 4 such bands (with clay between different layers) to 238. Perhaps the top 20cm of this profile is a recent addition - evidence being it is redder, and has many stones. Layer 04 may be an AC rather than B2. Sample 04 was not bagged. Lab pH for 05305 reported as 5.82 altered to 8.82 following analysis of pH data.

A12

A13

Observation Notes

Parent Rock: colluvial sediment, from sandstone and basalt, with lime, clay colluvium, thick, with basalt

Site Notes

Much basalt and sandstone surface stone. Site 15m east of drainage line. Surface beginning to coarse self mulch. Extensive contour banks on lower pediment slope. The surface stone probably reduces soil erosion. Water for irrigation is at a

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+)/kg	Acidity		%
0 - 0.02	7.11A	0.205A	22.74B	9.38	4.07	0.11			
0 - 0.1	6.9A	0.295A	26.65B	9.8	3.56	0.06			
0.1 - 0.2	7.42A	0.147A	26.25B	9.62	1.86	0.17			
0.3 - 0.4	8.16A	0.111A	37.17B	13.33	0.72	0.28			
0.5 - 0.6	8.07A	0.134A	38.37B	17.99	0.44	0.37			
0.7 - 0.8	8.82A	0.171A	30.36B	21.73	0.38	0.91			
1.2 - 1.3	8.96A	0.307A	19.7B	27.23	0.34	4.83			
2.28 - 2.38	8.64A	0.199A	10.66B	15.83	0.37	3.92			

Depth m	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	mg/kg	%	%	%	Mg/m ³	GV	CS	FS %	Silt Clay
0 - 0.02	<0.1B	3.71C									19.2 46.7
0 - 0.1	<0.1B	2.96C	93.9J								20.1 55.2
0.1 - 0.2	<0.1B	2.07C	36.8J								20.2 57
0.3 - 0.4	0.1B	1.19C	1.6J								15.7 62
0.5 - 0.6	0.1B	1.22C	1.3J								18.3 52
0.7 - 0.8	2.6B	0.93C	4.2J							12	63.4
1.2 - 1.3	1.1B	0.55C	11.4J							12.2	64.9
2.28 - 2.38	<0.1B	0.37C	18.1J							11.4	60.8

[illegible]

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method